Mural Net

August 8th, 2018

To:
Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW, Room TW-B204
Washington, D.C. 20554

From:
Mural Net
1900 Fruitvale Ave, STE 3F
Oakland, CA 94601

Re:
Comments regarding FCC Notice of Proposed Rulemaking (18-120)

Dear Secretary Dortch,

Mural would like to thank the FCC for the opportunity to provide comment on proposed rulemaking that would make portions of the 2.5 GHz band (2496-2690 MHz) available to Native nations in rural areas. Mural is a nonprofit that provides equipment, administrator training, engineering support and legal services to deliver high-speed wireless internet access to student homes. We partner with with tribal leaders, educational institutions and Internet Service Providers (ISPs) to construct a point-to-multipoint LTE network completely funded by donations.

Nearly two-thirds of people living on tribal lands in the United States lack access to high-speed internet. Efforts continue to digitize education and move to online resources. Many rural schools are being updated with fiber and modern computer equipment, but most students on tribal lands cannot access those increasingly essential resources from home. This lack of off-campus access has been termed the "Homework Gap," and arguably creates a greater disadvantage for rural tribal students than existed before the advent of digital education.

Future 5G technology could supply high-speed internet to rural areas at blazing speeds but it is unlikely to serve rural students for several years. Today there exist technologies

that bring down the cost of providing broadband access to rural areas dramatically. Unfortunately, rural areas tend to be too sparsely populated to attract large telecom providers to build the necessary cellular infrastructure and satellite broadband costs are prohibitively high for most of the population. Therefore, large swaths of reservations remain unconnected. However, through strategic partnerships and favorable federal governmental policies, tribes can have full operational control and governance of their own networks, and provide free broadband access to their people.

Mural has worked with tribes such as the Havasupai and ISPs like Niles Radio Communications to build and maintain LTE networks that deliver high-speed internet to the homes of students on rural tribal lands at no cost to the tribe. Due to low equipment costs, use of existing infrastructure, partnerships with local educational institutions and ISPs, and the use of open source management software, networks can be erected for as little as $10,000 per node site. For the Havasupai, this was sufficient to cover the whole town of Supai, the most remote community in the lower forty-eight states. In fact, if the FCC allowed the Havasupai Tribal Council to utilize two sets of contiguous 20 MHz bandwidth, every home in the remote town could have high speed internet within a week.

By far the biggest challenge in bringing high-speed internet to homes in Supai was obtaining permission from the FCC to use the 2.5Ghz spectrum. Lawyer fees exceeded equipment costs for the initial Havasupai network deployment. Major delays were due to FCC application processing for special temporary authorizations. Within days of obtaining permission to go forward from the FCC, the first end-to-end connection was established. Soon after, LTE/wifi routers were distributed to teachers and students by the Tribe and a system was developed so that students returning home from boarding school over the weekend and long breaks could checkout additional LTE/wifi routers so that they can keep up with school work.

While it is fortunate that the FCC had the foresight thirty years ago to reserve bandwidth for educational use, it is underutilized, and the rules for its use are outdated. Open licensing has not happened since 1995. Therefore this NPRM is timely. Currently the FCC is considering giving current license holders, local tribes, and local educational institutions priority for claiming unlicensed 2.5 GHz spectrum and then auctioning off the remaining spectrum rights. If these priority windows are not implemented, tribes and schools will be hard-pressed to compete with the major telecoms who are unlikely to develop broadband on tribal lands due to predicted low return on investment (ROI), which is happening today. This would be disastrous for the tribes.

While the accomplishment of the Havasupai Tribal Council, Niles Radio Communications and Mural Net are impressive, it is not unique. The model has proven to be repeatable with other tribes and we foresee it to be scalable. If tribes obtain licenses for spectrum on their lands and have backhaul, they will be able to self-deploy LTE networks and provide high-speed internet access to their people like the Havasupai Tribe has. Local ISPs have been more amenable to forging alliances with tribes than the large national telecoms despite low (ROI). They often consider themselves part of the same larger local community. Kelly Cullen of Niles Radio Communications provides backhaul for free for the Havasupai.

The support systems such as Mural exist and tribes can take advantage of such partnerships if current FCC rules are changed, such that tribes can claim EBS spectrum before it is auctioned off to the highest bidder. Policy makers thus have an opportunity to influence the future of tribal Nations and their ability to provide much needed broadband access for their people and their communities. Havasupai Chairwoman Coochwytewa states that “without a permanent license, we are worried that the Tribe might lose our EBS spectrum, which would be a terrible blow to the progress that we have made so far. I do not want to see our people’s progress halted by a regulatory hurdle.”

The Homework Gap is growing and students on tribal lands are being left behind. However, self-deployed networks by tribes can change that. Council Member Watahomigie-Corliss explains that “In Supai, if we can get and utilize internet education, it would greatly improve the people’s morale. I know that the people are willing and want to help the community and do everything in their power to keep the community thriving. This will be an opportunity, probably the first opportunity Supai has ever had to actually do online courses, extended education courses, Associate’s programs, GED programs, correspondence classes, online training classes, and maybe get a bachelor’s or college degree. That will greatly help the people and that’s what we want. That’s what they want.”

In general, rural Native nations have inadequate access to broadband service, creating a disparity that grows daily as society becomes increasingly dependent on internet-based communications. Expanding access to the 2.5 GHz band will enable the federal government to fulfill its trust responsibilities to sovereign Native nations while strengthening tribal self-determination. Mural would like to make the following recommendations regarding disbursement of unused portions of the 2.5 GHz band:

- Native nations should be granted a local priority filing window to obtain spectrum before other entities, including current licensees seeking to expand.
- For Native nations, the geographic service area should be marked by reservation boundaries rather than census tracts or counties.
- During the local filing window, Native nations should have the option of acquiring all available channels in the 2.5 GHz band on their respective reservation lands.
- If 50% of a tribal community cannot be served by existing licensees and/or the 2.5 GHz band is not in use, tribes should have the option to build and maintain their own networks.
- The educational focus of the EBS spectrum should be preserved and should focus on connecting the most disadvantaged students of any age (from 0 to adult continuing education).
- We recommend a 90-day notice before any priority filing window is introduced and 60-days within which to file for unused spectrum.

We thank the Commission for the opportunity to provide comments and urge the FCC to consider the importance of internet-equity for Native nations as it makes unused portions of the 2.5 GHz band available, prioritizing communities that have become increasingly disenfranchised in the digital age.

Sincerely,

Mariel Triggs
Chief Operating Officer
Mural Net